

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
18 November 2004 (18.11.2004)

PCT

(10) International Publication Number
WO 2004/099385 A3

(51) International Patent Classification⁷: C12N 5/00, 9/12,
15/00, C07H 21/04, C12P 21/06, C12Q 1/48

(21) International Application Number:
PCT/US2004/013799

(22) International Filing Date: 30 April 2004 (30.04.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/466,427 30 April 2003 (30.04.2003) US

(71) Applicant (for all designated States except US): DUKE
UNIVERSITY [US/US]; Office of Science and Technol-
ogy, P.O. Box 90083, Durham, NC 27708-0083 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): COUNTER,
Christopher, M. [US/US]; c/o Duke University, Pharma-
cology and Cancer Biology, P.O. Box 3813, Durham, NC
27708-0083 (US). ARMBRUSTER, Blaine, N. [US/US];
c/o Duke University, Pharmacology and Cancer Biology,
P.O. Box 3813, Durham, NC 27708-0083 (US).

(74) Agent: WILSON, Mary, J.; Nixon & Vanderhye P.C.,
Suite 800, 1100 North Glebe Road, Arlington, VA 22201-
4714 (US).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

(88) Date of publication of the international search report:
30 June 2005

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: TELOMERE ELONGATION

(57) Abstract: The present invention relates, in general, to telomeres, and, in particular, to a method or effecting telomere elongation in mammalian cells. The invention further relates to a protein suitable for use in such a method and to nucleic acid sequences encoding same.

WO 2004/099385 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/13799

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C12N 5/00, 9/12, 15/00; C07H 21/04; C12P 21/06; C12Q 1/48

US CL : 435/194, 15, 69.1, 320.1, 325; 530/350, 358, 387.3; 536/23.4, 23.2, 23.1

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 435/194, 15, 69.1, 320.1, 325; 530/350, 358, 387.3; 536/23.4, 23.2, 23.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EVANS S. K. et al. EST1 and Cdc13 as Comediators of Telomerase Access, Science, October 1, 1999, Vol. 286, pp.117-120; see the abstract; page 118, right and middle columns, page 119, right column, second paragraph	1-2, 6-8, 11-14, 17, 22-24
Y		4, 5
Y	BAUMANN P. et al. Protection-of-Telomere-1 (pot1) Protein and Encoding Polynucleotides, US 2002/0137703 A1, 26 September, 2002;	1-15, 17-24
Y	BAUMAN P. et al., Pot1, the PutativeTelomere End-Binding Protein in Fission Yeast and Humans, Science, 11 May, 2001, Vol. 292, pp. 1171-1175; see particularly page 1174, the right column	1-15, 17-24
X, P	ARMBRUSTER B. N., et al. Putative-Telomere-Recruiting Domain in the Catalytic Subunit of Human Telomerase, Mol. Cell. Biol. May 2003, Vol. 23, No. 9, pp. 3237-3246	1-4, 6-8, 11-14, 17, 21-24
Y, P	COLGIN L. K. et al. Human Pot1 Facilitates Telomere Elongation by Telomerase, Current Biol. 27 May 2003, Vol. 13, pp. 942-946; see the whole document	1-5, 17-24
A, P	LOAYZA D. et al. POT1 as a terminal transducer of TRF1 telomere length control, Nature, 26 June, 2003, Vol. 423, pp. 1013-1018; see the whole document	1-24

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:		"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E"	earlier application or patent published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

13 April 2005 (13.04.2005)

Date of mailing of the international search report

11 MAY 2005

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (571) 273-8300

Authorized officer

Ponnathapura Achutamurthy

Telephone No. (571) 272-0928

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US04/13799

Continuation of B. FIELDS SEARCHED Item 3:
NCBI, Medline, WEST
searched terms: pot1,
US200/0137703A1